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basic imagery interpretation report

Mobile IRBM Bases Verkhnyaya Salda SSM Complex (S)

DEPLOYED STRATEGIC SSM FACILITIES

USSR

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AUGUST 1982
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INSTALLATION OR ACTIVITY NAME					COUNTRY
Mobile IRBM Bases, Verkhnyaya Salda SSM Complex					UR
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	See below	Various	See below	See below	See below
MAP REFERENCE					
SAC. USATC, Series 200, Sheet 0156-13, scale 1:200,000					
LATEST IMAGERY USED			NEGATION DATE (If required)		
NA			NA		

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Installation Name	Geographic Coordinates	BE No	COMIREX No	NIETB (MRN) No
Verkhnyaya Salda SSM Complex	58-08-18N 060-33-36E			
Verkhnyaya Salda Mobile IRBM Base 1	58-08-20N 060-32-10E			
Verkhnyaya Salda Mobile IRBM Base 2	58-13-39N 060-40-29E			
Verkhnyaya Salda Mobile IRBM Base 3	58-05-01N 060-12-21E			
Verkhnyaya Salda Mobile IRBM Base 4	58-06-12N 060-21-33E			
Verkhnyaya Salda Mobile IRBM Base 5	58-11-54N 060-34-38E			

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ABSTRACT

1. (S/WN) This is the first NPIC basic report on the five SS-20 mobile intermediate-range ballistic missile bases that have been under construction since February 1978 in the Verkhnyaya Salda Surface-to-Surface Missile Complex, USSR, a former SS-7 ICBM complex. Each base is functionally divided into an operations area and a general support area. The complex includes a rail-to-road transfer point, [redacted] and three field training areas.

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2. (C) This report includes a location map, eight annotated photographs, and five tables.

INTRODUCTION

3. (S/WN) The Verkhnyaya Salda Strategic Rocket Forces Division comprises five SS-20 mobile intermediate-range ballistic missile (IRBM) bases at the Verkhnyaya Salda Surface-to-Surface Missile (SSM) Complex, USSR. The nine SS-7 ICBM launch sites at this complex have been dismantled.

4. (S/WN) The SSM complex is 43 kilometers (km) east of the Ural Mountains between the Salda and Tagil Rivers and extends into the area north and west of the town of Verkhnyaya Salda (Figure 1). All-weather, hard-surfaced roads and an electrified railroad connect Verkhnyaya Salda with Nizhniy Tagil, 29 km to the southwest, and Sverdlovsk, 108 km to the south. The five SS-20 mobile IRBM bases were constructed at former SS-7 launch sites in areas heavily forested with pine and birch. The area has rolling terrain, with elevations ranging from 150 to 210 meters above sea level. Local industries include peat cutting from the swampy areas and timbering. Area soils are turfy podzols on the hills and bog soils and boggy podzols in the low-lying areas. Winters are long and cold, and summers are short, cool, and rainy. Winter temperatures range from minus 43 degrees to 3 degrees Celsius, with an average of minus 14 degrees Celsius. The average annual precipitation is 45.5 centimeters, including an average stable snow cover of 68.6 centimeters from late October to late April.¹

5. (S/WN) Facilities associated with the Verkhnyaya Salda SSM Complex are shown on Figure 1. The following field training areas (FTAs) for the SS-20 mobile IRBM system are also associated with the Verkhnyaya Salda SSM Complex, but are not shown on Figure 1.

Name	Geographic Coordinates	BE No
Verkhnyaya Salda FTA 1A-Revetted	58-03-45N 060-54-20E	
Verkhnyaya Salda SS-20 FTA 1B-Revetted	58-09-04N 060-44-42E	
Verkhnyaya Salda FTA 2A-Revetted	58-06-45N 060-54-02E	

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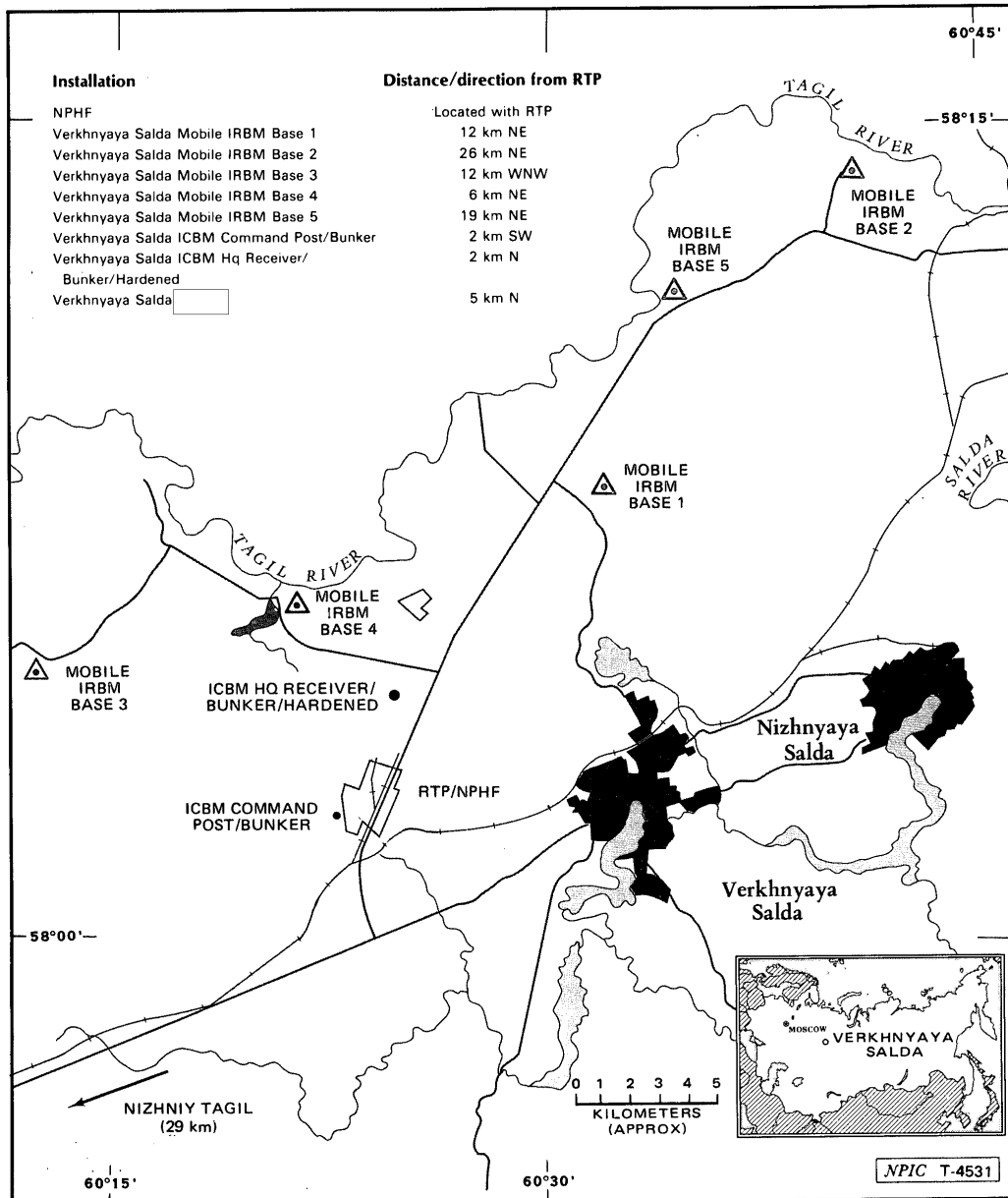


FIGURE 1. LOCATIONS OF SS-20-ASSOCIATED FACILITIES, VERKHNYAYA SALDA SSM COMPLEX, USSR

BASIC DESCRIPTION

6. (S/WN) A unique construction feature at all mobile IRBM bases in the Verkhnyaya Salda SSM Complex was the installation of hardpoints in the foundations of the SS-20 single-bay garages (Figure 2). The hardpoints are 9 meters apart, the distance between the leveling jacks of the SS-20 transporter-erector-launcher (TEL). The hardpoints were probably required because of unstable soil conditions at Verkhnyaya Salda. Similar hardpoints have been identified at Plesetsk Missile/Space Test Center SSM

Mobile IRBM Base 1

7. (S/WN) Verkhnyaya Salda Mobile IRBM Base 1 (Figure 3 and Table 1) was constructed at Verkhnyaya Salda SSM Launch Position 10 [redacted]. This launch position was originally a type IID soft SS-7 launch site constructed between February 1963 and February 1964.³ It was operational until it was dismantled in October 1976. Conversion of the site to an SS-20 mobile IRBM base was underway on [redacted] and by January 1979, the base appeared to be capable of maintaining an operational SS-20 missile unit. Existing SS-7 facilities were used where possible; however, many new SS-20-related buildings were constructed.

Operations Area

8. (S/WN) The operations area includes nine single-bay, sliding-roof garages; three three-bay garages; two security buildings; and two ancillary buildings. The single-bay garages are arranged in groups of three. Each three-bay garage is cable connected to a group of single-bay garages which house a battalion; the three battalions form a regiment. When originally constructed, each single-bay garage included an addition along one or both sides. These additions were probably designed to complicate the identification of the buildings from imagery. They could also have been for personnel use or storage of equipment. Similar additions to the single-bay garages were also observed at Verkhnyaya Salda Mobile Bases 2, 3, and 4. By December 1981, these additions had been removed from all the garages except those at Mobile Base 2, where they remained as of [redacted]

9. (S/WN) Five bunkers of various sizes, three large enough to accommodate SS-20 launch-related vehicles with missile canisters, are in the operations area. Two of these larger bunkers were previously used as SS-7 missile-ready bunkers. They were modified during the SS-20 conversion by the installation of roof vents; one of the bunkers was also changed from drive in to drive through.

10. (S/WN) Security for the operations area includes a security building at the entrance and six rows of perimeter fences. Three fences were added during the SS-20 conversion. At least three guardposts are along the perimeter fences. An earth-covered personnel passageway extends from the security building, under three security fences, to the operations area. This passageway is similar to those seen at fourth-generation ICBM sites and probably serves as security personnel access.

General Support Area

11. (S/WN) The general support area (GSA) consists of four subareas: a housing/administration area, a vehicle maintenance/storage area, an agricultural area, and a steamplant.

12. (S/WN) The housing/administration area contains two barracks and two dormitories totaling 3,655 square meters of floor space. A command, control, and communications (C3) building; two messhalls; a firehouse; a security building; a probable recreation building; a probable utility building; and nine other buildings are also in the GSA. Footings for two multistory dormitories, present in January 1981, were still present as of March 1982. No building construction on these footings was evident.

13. (S/WN) The communications system consists of a C3 building with a roof-mounted YU-EL-01 antenna array and two 28-meter-high lattice towers that are cable connected to the C3 building. The lattice towers had been erected by November 1978. This communication system has been identified at SS-20 bases in the Chita, Omsk, Vladimir, and Orenburg SRF Armies.⁴

14. (S/WN) The vehicle maintenance/storage area consists of two separately secured areas near the steamplant. The vehicle maintenance area contains three garages, an administration/workshop building, three other buildings, and a fueling island. The vehicle storage area contains two 11-bay garages and an administration/supply building, which were constructed during the SS-20 conversion. The 11-bay garages house SS-20 ground support equipment (GSE) used for missile checkout, guidance, communications, and targeting.

15. (S/WN) The agricultural area contains a semiburied food storage building, a greenhouse, and two other buildings near the messhall. A barn and two associated structures are in a clearing at the western end of the GSA.

16. (S/WN) The steamplant includes a two-story, probable triple-boiler powerhouse and a pump-house.

17. (S/WN) A single security fence encircles the entire GSA. Security buildings are at the main entrance of the base and at the entrance to the operations area.

Mobile IRBM Base 2

18. (S/WN) Verkhnyaya Salda Mobile IRBM Base 2 (Figure 4 and Table 2) was constructed at Verkhnyaya Salda SSM Launch Position 7 [redacted]. This launch position was originally a type IIIA hard SS-7 launch site constructed between February 1961 and April 1963. It was operational until it was dismantled in October 1977. Conversion of the site to an SS-20 mobile IRBM base was underway on [redacted] when foundations for single-bay and three-bay garages were observed in the [redacted] of the former SS-7 site. This was the first time an SS-20 operations area was constructed in a [redacted]. Construction of the operations area was complete by March 1980, when the base appeared to be capable of maintaining an operational SS-20 missile unit. Existing SS-7 facilities were used where possible; however, many new SS-20-related buildings were constructed.

Operations Area

19. (S/WN) The operations area contains nine single-bay garages; three three-bay garages; two [redacted] two drive-in, former SS-7 missile ready bunkers; several small support buildings; and a security building with a covered personnel passageway. The security building was modified during the SS-20 conversion.

20. (S/WN) Security for the area consists of at least six fences, two of which have been added since the start of the SS-20 conversion. These two fences, each with a gate, are at the approach to the security building. Three other fences, each with a gate, are just inside the operations area, between the security building and the nearest single-bay garage.

General Support Area

21. (S/WN) The GSA consists of four subareas: a housing/administration area, a vehicle maintenance/storage area, an agricultural area, and a steamplant.

22. (S/WN) The housing/administration area contains two dormitories and three barracks totaling 4,380 square meters of floor space. A C3 building, two multistory administration buildings, a probable officers' mess, a messhall, an auxiliary diesel generator building, a firehouse, a security building, a personnel shelter, and a single-story administration building are also in this area.

23. (S/WN) The communications system consists of a C3 building and two 28-meter-high lattice towers that are cable connected to the C3 building. These facilities were constructed between February and September 1979, during the SS-20 conversion. In July 1979, a YU-EL-01 antenna was emplaced on the roof of the C3 building. This is the same type of antenna as those seen on C3 buildings at SS-20 bases in the Chita, Omsk, and Vladimir SRF armies, as well as at Verkhnyaya Salda Mobile IRBM Bases 1 and 3.⁴

24. (S/WN) The vehicle maintenance/storage area contains two 11-bay garages, three administration/workshop buildings, a five-bay garage, and a security building. The 11-bay garages and one of the administration/workshop buildings were constructed during the SS-20 conversion.

25. (S/WN) The agricultural area is in the southwestern corner of the GSA and contains three food storage buildings, a cattle barn with a fenced area, a storage shed, and two other buildings. This area has not changed since the SS-7 site became operational.

26. (S/WN) The steamplant consists of a powerhouse and an associated utility building at the northwestern corner of the GSA. Aboveground steamlines connect the main powerplant with essential components of the operations area and the GSA.

27. (S/WN) Security for the area consists of a single fence around the entire GSA. The vehicle maintenance/storage area is separately secured by a combination board and wire fence.

(Continued p. 8)

Table 1.
Verkhnyaya Salda Mobile IRBM Base 1, USSR
(Items keyed to Figure 3)

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Item	Description	Dimensions (m)			Roof Cover (sq m)	Remarks	Item	Description	Dimensions (m)			Roof Cover (sq m)	Remarks					
		L	W	H					L	W	H							
GENERAL SUPPORT AREA																		
Housing/Admin Area																		
1	Security bldg					Flat roof, 1 story; controls access to GSA	31	Prob fuel pumphouse					Flat roof, 1 story; separately secured bldg for adj fuel island					
2	Dorm (2)					Flat roof, 2 stories	32	4-bay garage addition					Arched roof, 1 story					
3	Barracks (2)					Peaked roof, 1 story	33	Admin/supply bldg					Flat roof, 1 story					
4	Admin bldg					Flat roof, 2 stories	34	11-bay garage (2) door					Flat roof, drive in: 11 sets of double doors					
5	Prob stor bldg					Flat roof, 1 story	Steamplant						Flat roof, 2 stories; raised end sect; lower addition					
6	Single-story bldg					Peaked roof, part of former barracks	35	Powerhouse										
7	C3 bldg					Peaked roof, 2 stories; YU-EL O1 antenna on roof	36	Pumphouse										
8	Firehouse					Flat roof, 1 story; firewall separates troop qtrs from vehicle parking bay	OPERATIONS AREA						Flat roof, 1 story; tower on front; aboveground covered passageway connects to underground personnel entr into operations area					
9	Prob commo assoc bldg					Flat roof, 2 stories; drive through	37	Security bldg										
10	Messhall					Flat roof, 1 story	38	Personnel passageway										
11	Messhall					Flat roof, 1 story; prob officers' mess	39	Flat-roofed bldg										
12	Single-story bldg					Flat roof, function unk	40	Missile-ready bunker										
13	Single-story bldg					Flat roof, function unk	41	Single-bay garage (9) door										
14	Single-story bldg					Peaked roof, function unk	42	3-bay garage (3)										
15	Single-story bldg					Flat roof, function unk	43	Bunker										
16	Single-story bldg					Peaked roof, function unk	44	Bunker										
17	Prob rec bldg					1 story, peaked roof, small addition on both ends	45	Security bldg										
18	Prob utility bldg					Flat roof, 1 story; prob assoc with water utility; several buried stor tanks nearby												
Agricultural Area																		
19	Prob stor bldg					Peaked roof, 1 story	46	Bunker					Drive in, prev for SS-7 warhead stor fac; current function unk					
20	Barn					Peaked roof, 1 story; cattle feed/supply	47	Missile-ready bunker										
21	Stor shed					Peaked roof, 1 story	48	Flat-roofed bldg										
22	Food stor bldg					Semburied, earth-roofed entr at each end												
23	Stor bldg					Peaked roof, 1 story												
24	Stor bldg					Peaked roof, 1 story												
25	Greenhouse					Peaked roof, glass with step-roofed wooden addition												
Vehicle Maintenance/Storage Area																		
26	Prob utility bldg					Stepped roof, 2 stories							Drive in, prev for SS-7, SS-20 function unk					
27	5-bay garage					Flat roof, 1 story												
28	Admin/workshop bldg					Flat roof, 1 story; no apparent garage doors												
29	8-bay garage					Flat roof, 1 story												
30	Security bldg					Flat roof, 1 story; controls access into motor pool area												

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Table 2.
Verkhnyaya Salda Mobile IRBM Base 2, USSR
 (Items keyed to Figure 4)

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Item	Description	Dimensions (m)			Roof Cover (sq m)	Remarks				
		L	W	H						
OPERATIONS AREA										
1	Single-bay garage (9)				Sliding roof; houses SS-20 missile on TEL; various configurations of flat-roofed additions added to each garage to alter shape; additions average <input type="text"/> high	25X1				
2	3-bay garage (3) door				Flat roof, 1 story; 3 sets of double doors; houses SS-20 missile spt vans; wall extends to <input type="text"/> above roof on sides and front	25X1				
3	Bunker				Drive in, earth covered; prev for SS-7 <input type="text"/>	25X1				
4	Bunker				Drive in; prev for SS-7 <input type="text"/>	25X1				
5	Single-story bldg				Flat roof; function unk					
6	Missile-ready bunker (2)				Drive in, 2 bays, arched roof, earth covered					
7	Personnel passageway				Earth covered; allows passage to operations area from GSA; constructed during SS-20 conversion					
8	Security bldg				Flat roof, 1 story; connects with personnel passageway to operations area					
GENERAL SUPPORT AREA										
Housing/Admin Area										
9	Security bldg				Peaked roof, 1 story	25X1				
10	C3 bldg				Flat roof, 2 stories; YU-EL-01 antenna on roof; cable connected to lattice towers					
11	Admin bldg				Flat roof, 2 stories					
12	Admin bldg				Flat roof, 2 stories					
13	Prob officers' mess				Flat roof, 1 story					
14	Aux diesel generator bldg				Flat roof, 1 story					
15	Messhall				Flat roof, 1 story					
16	Firehouse				Flat roof, 1 story					
17	Barracks				Peaked roof, 1 story					
18	Dorm				Flat roof, 2 stories					
19	Dorm				Flat roof, 2 stories					
20	Barracks				Peaked roof, 1 story					
21	Barracks extension				Peaked roof, 1 story					
22	Personnel shelter				Peaked roof, 1 story; partly earth mounded					
23	Admin bldg	Peaked roof, 1 story								
Agricultural Area										
24	Food stor bldg				Peaked roof, 1 story	25X1				
25	Food stor bldg				Peaked roof, 1 story					
26	Food stor bldg				Peaked roof, 1 story; semibunkered					
27	Stor shed				Flat roof, 1 story					
28	Stor bldg				Flat roof, 1 story					
29	Stor bldg				Peaked roof, 1 story					
30	Cattle barn				Peaked roof, 1 story; fenced					
Steamplant										
31	Utility bldg							Peaked roof, 1 story; assoc with powerhouse		
32	Powerhouse							Flat roof, multistory; raised roof sect		
Vehicle Maintenance/Storage Area										
33	Admin/workshop bldg				Flat roof, 1 story	25X1				
34	Admin/workshop bldg				Flat roof, 1 story					
35	11-bay garage (2) door				Flat roof, drive in; 11 sets of double doors					
36	Admin/workshop bldg				Flat roof, 1 story					
37	Security bldg				Flat roof, 1 story					
38	5-bay garage				Flat roof, 1 story					

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28. (S/WN) Verkhnyaya Salda Mobile IRBM Base 3 (Figure 5 and Table 3) was constructed at Verkhnyaya Salda SSM Launch Position 9 [REDACTED]. This launch position was originally a type IID soft SS-7 launch site constructed between February 1963 and February 1964. It was operational until it was dismantled in September 1977. Conversion of the site to an SS-20 mobile IRBM base was underway on [REDACTED] and by December 1980, the base appeared to be capable of maintaining an operational SS-20 mobile missile unit. Existing SS-7 facilities were used where possible; however, many new SS-20-related buildings were constructed. By [REDACTED] the additions on eight of the nine single-bay garages had been removed.

25X1

25X1

25X1

25X1

Operations Area

29. (S/WN) The operations area contains nine single-bay garages; three three-bay garages; three drive-in, former SS-7 missile-ready bunkers; four other former SS-7 storage bunkers; and a newly constructed, covered personnel passageway adjoining the security building and observation tower. The security building and tower guard the only road entrance into the operations area.

30. (S/WN) Security for the area consists of six wire fences, two of which were constructed during the SS-20 conversion. Five of the fences have gates.

General Support Area

31. (S/WN) The GSA consists of four subareas: a housing/administration area, a vehicle maintenance/storage facility, an agricultural area, and a steamplant.

32. (S/WN) The housing/administration area contains two dormitories and three barracks totaling 4,360 square meters of floor space. A security checkpoint, a C3 building, two multistory administration buildings, a probable officers' mess, a messhall, a firehouse, a probable sauna, a probable recreation building, a small-arms firing range, an obstacle course, a helipad, and eight other miscellaneous buildings are also in this area.

33. (S/WN) The communications system consists of a C3 building and two 28-meter-high lattice towers that are cable connected to the C3 building. These facilities were constructed between November 1979 and September 1980. A YU-EL-01 antenna was on the roof of the C3 building by August 1980. This is the same type of antenna as those observed on C3 buildings at SS-20 mobile bases in the Chita, Omsk, and Vladimir SRF armies, as well as at Verkhnyaya Salda Mobile IRBM Bases 1 and 2.⁴

34. (S/WN) The vehicle maintenance/storage facility consists of two separately secured areas. The vehicle maintenance area at the eastern end of the GSA was formerly used for SS-7 operations. It contains three garages, a maintenance/workshop building, an administration building, and a utility building. The vehicle storage area, constructed during the SS-20 conversion, contains a security building, an 11-bay garage, and a maintenance/workshop building.

35. (S/WN) The agricultural area is near the two messhalls and contains a long, partly earth-mounded food storage building; a greenhouse; two food storage buildings; and an administration/storage building. A second agricultural area (not shown on Figure 5) is approximately 500 meters north of the messhalls and contains a barn and at least six associated buildings and sheds.

36. (S/WN) The steamplant consists of a powerhouse and a probable utility building near the vehicle maintenance area. The powerhouse has six circular roof vents and is connected by aboveground steamlines to all essential components of the base.

37. (S/WN) Security consists of a single fence around the entire area. In addition, the C3 building and the vehicle maintenance/storage areas are separately secured. Security checkpoints control access to the operations area and the GSA.

Mobile IRBM Base 4

38. (S/WN) Verkhnyaya Salda Mobile IRBM Base 4 (Figure 6 and Table 4) was constructed at Verkhnyaya Salda Launch Position 1 [REDACTED]. This launch position was originally a type IIA soft SS-7 site constructed between May 1960 and April 1962. It was operational until it was dismantled in August 1977. Conversion of the site to an SS-20 base was underway in February 1980, and by December 1980, the base appeared to be capable of maintaining an operational SS-20 mobile missile unit. Existing SS-7 facilities were used where possible; however, many new SS-20-related buildings were constructed. By [REDACTED] the additions to the single-bay garages had been removed.

25X1

25X1

25X1

Operations Area

39. (S/WN) The operations area contains nine single-bay garages, three three-bay garages, three bunkers formerly used for SS-7 activities, and two other small buildings probably used for vehicle storage and general support functions.

40. (S/WN) The operations area is separated from the two former SS-7 missile-ready buildings and their associated vehicle maintenance/parking facilities, which had been included in the former SS-7

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launch area, by fences that have been newly constructed or realigned. Additional security is provided by a newly constructed personnel passageway and modifications to an adjoining security building (items 30 and 31, Figure 6 and Table 4) at the entrance to the area. At least three other fences and another security building and observation tower are approximately 200 meters south of the personnel passageway. All seven fences have gates.

General Support Area

41. (S/WN) The GSA consists of five subareas: a housing/administration area, a vehicle maintenance/storage area, two agricultural areas, and a steamplant.

42. (S/WN) The housing/administration area contains seven single-story barracks/administration buildings and a multistory dormitory. The total floorspace is 9,698 square meters. The dormitory was under construction during SS-20 conversion and was not complete until May 1981, nearly five months after the base was considered operational. The dormitory replaced three single-story barracks which formerly occupied the same area. A C3 building, a firehouse, a probable officers' quarters, a messhall, a recreation building, a probable sauna, a transformer building, a utility building, a security checkpoint, a security building, and approximately five other buildings used for administration/logistical support are also included in the housing/administration area.

43. (S/WN) The communications system consists of a C-shaped C3 building that is probably cable connected to four 28-meter-high lattice towers. This C3 building was the first of this design to be constructed in the Verkhnyaya Salda SSM Complex. The roof-mounted antenna array consists of two sets of three probable antenna positions in a triangular configuration. This array is different in configuration from the YU-EL-01 array.

44. (S/WN) The vehicle maintenance/storage area is divided into three areas designated A, B, and C. Area A is the former SS-7 GSE maintenance area and contains three six-bay garages and an administration/workshop building constructed during the SS-20 conversion. Area B includes two former SS-7 missile-ready buildings, an eight-bay garage, a two-bay garage, five maintenance/workshop buildings, and a security building. Area C contains a five-bay garage, a maintenance/workshop building, an administration/security building, and an eight-bay garage.

45. (S/WN) One agricultural area is across the road from the main messhall and recreation buildings and contains a food storage building, five probable food storage buildings, and a probable administration/storage building. A second agricultural area consisting of a cattle barn and an associated building are in a cleared area approximately 200 meters west of the soccer field.

46. (S/WN) The steamplant consists of a powerhouse, an auxiliary diesel generator building, a cooling tower, and a probable pumphouse. The powerhouse is connected by aboveground steamlines to all essential components of the base.

47. (S/WN) Security consists of a single wire fence around the GSA. A security checkpoint is at the entrance to the GSA. Vehicle maintenance/storage areas A and C and the C3 building are separately secured. A security building with an adjacent observation tower and three fences protect the entrance to area B of the vehicle maintenance/storage area.

Mobile IRBM Base 5

48. (S/WN) Verkhnyaya Salda Mobile IRBM Base 5 (Figure 7 and Table 5) was constructed at Verkhnyaya Salda SSM Launch Position 4 [redacted] This launch position was originally a type IIB soft SS-7 site constructed between February 1961 and April 1962. It was operational until it was dismantled in January 1977. Conversion of the site to an SS-20 base was underway on [redacted] and by November 1981, the base appeared to be capable of maintaining an operational SS-20 mobile missile unit. Existing SS-7 facilities were used where possible; however, many new SS-20-related buildings were constructed.

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Operations Area

49. (S/WN) The operations area includes nine single-bay, sliding-roof garages; three three-bay garages; two four-bay, drive-in, former SS-7 missile-ready bunkers; a four-bay garage; two former SS-7 [redacted] three probable security buildings; and a vehicle shed.

25X1

50. (S/WN) Construction in the operations area of Mobile IRBM Base 5 differed from that which occurred during the SS-20 conversion of the other four former SS-7 launch sites in the Verkhnyaya Salda SSM Complex. This unusual activity was identified in February 1981 when eight two-bay, peak-roofed buildings and footings for a ninth were observed in the launch area of the dismantled SS-7 site. In May 1981, one of the buildings was dismantled, and during the next five months, more buildings were removed. By [redacted] all the buildings were gone. Also during this period, a single-bay garage was constructed without a standard foundation on one of the former SS-7 launch pads. It was removed in October 1981. The purpose of these temporary structures is not known.⁵ Construction of the SS-20 single-bay garages on standard foundations began in April 1981 and continued until [redacted] when all were complete.

25X1

25X1

51. (S/WN) Security for the operations area consists of six wire fences, three constructed during the SS-20 conversion. The security building is at the only entrance to the area, which is protected by three fences. The fences are between the security building and the road junction, approximately 100 meters to the south. A covered passageway provides access through two fences into the operations area. A fence also protects the former [redacted]

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Table 3.
Verkhnyaya Salda Mobile IRBM Base 3
(Items keyed to Figure 5)

This table in its entirety is classified SECRET/WWINTEL

Item	Description	Dimensions (m)		Roof Cover (sq m)	Remarks	
		L	W			
OPERATIONS AREA						
1	Missile-ready bunker				1 bay, drive in; prev SS-7 missile-ready bunker	25X1
2	Single-bay garage (9)				Sliding roof; houses SS-20 missile on TEL; additions that altered shape removed by []	25X1
3	Missile-ready bunker (2)				2 bays, drive in; prev SS-7 missile-ready bunker	25X1
4	3-bay garage (3) door				Flat roof, 1 story; 3 sets of double doors; houses SS-20 missile spt vans; wall extends [] above roof on sides and front	25X1
5	Bunker				Drive in; prev SS-7 assoc	25X1
6	Bunker				Drive in; prev for SS-7 warhead stor	25X1
7	Security bldg				Flat roof, 1 story; attached observ tower; controls access to former []	25X1
8	Shed				Open sided; poss for vehicles	25X1
9	Bunker				Drive in; prev for inspection and stor of SS-7 warheads	25X1
10	Admin/security bldg				Flat roof, 1 story; near security fence	25X1
11	Bunker				Drive in, prev prob SS-7 []	25X1
12	Personnel passageway				Earth covered; allows passage to operations area from GSA	25X1
13	Security bldg 7				Flat roof, 1 story; observ tower on roof; controls access to operations area	
GENERAL SUPPORT AREA						
Housing/Admin Area						
14	C3 bldg				Flat roof, 2 stories; YU-EL-01 antenna on roof; cable connected to lattice towers	25X1
15	Security checkpoint				Controls access to GSA	
16	Admin/office bldg				Flat roof, 1 story	
17	Dorm				Flat roof, 2 stories	
18	Prob rec bldg				Flat roof, 1 story	
19	Admin bldg				Flat roof, 2 stories	
20	Barracks (3)				Peaked roof, 1 story	
21	Dorm				Flat roof, 2 stories	
22	Admin bldg				Flat roof, 2 stories	
23	Small-arms firing range					
24	Obstacle course					
25	Helipad				900.0 sq m in area	
26	Firehouse				Flat roof, 1 story; 2 bays, one for personnel qtrs	
27	Stor bldg				Flat roof, 1 story	
28	Messhall				Flat roof, 1 story	
29	Prob officers' mess				Flat roof, 1 story	
30	Admin/stor bldg				Flat roof, 1 story	
31	Stor bldg				Flat roof, 1 story	
32	Stor bldg				Flat roof, 1 story	
33	Admin bldg				Flat roof, 1 story	
34	Prob sauna				Peaked roof with vents, 1 story	
35	Admin/stor bldg				Flat roof, 1 story	
36	Admin/stor bldg				Flat roof, 1 story	
Vehicle Storage Area						
37	11-bay garage door				Flat roof; drive in; 11 sets of double doors	
38	Security bldg				Controls access to operations area	
39	Maint/workshop bldg				Flat roof, 1 story	
Agricultural Area						
40	Greenhouse				Peaked roof, semiburied	
41	Food stor bldg				Bunkered; entrance at northern end	
42	Food stor bldg				Flat roof, 1 story; partly earth mounded; entrances at ends	
43	Admin/stor bldg				Peaked roof, 1 story	
44	Stor bldg				Flat roof, 1 story	
Steamplant						
45	Prob utility bldg				Flat roof, 2 stories	
46	Powerhouse stack				Flat roof, 2 stories; 6 circular vents on roof	
Vehicle Maintenance Area						
47	Admin bldg				Flat roof, 1 story	
48	Utility bldg				Mixed 1 and 2 stories, flat roof	
49	8-bay garage				Flat roof, 1 story	
50	5-bay garage				Flat roof, 1 story	
51	4-bay garage				Flat roof, 1 story	
52	Maint/workshop bldg				Flat roof, 1 story	

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Table 4.
Verkhnyaya Salda Mobile IRBM Base 4, USSR
(Items keyed to Figure 6)

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Item	Description	Dimensions (m)			Roof Cover (sq m)	Remarks	Item	Description	Dimensions (m)			Roof Cover (sq m)	Remarks
		L	W	H					L	W	H		
GENERAL SUPPORT AREA													
Housing/Admin Area													
1	C3 bldg					Flat roof. 1 story. C-shaped; prob cable connected to 4 lattice towers; roof-mounted antenna array	27	Maint/workshop bldg					Flat roof. 1 story
2	Flat-roofed bldg					1 story; prob related to item 3	28	Maint/workshop bldg					Slightly peaked roof. 1 story
3	Security bldg					Flat roof. 1 story; adj observ tower	29	Maint/workshop bldg					Peaked roof. 1 story
4	Flat-roofed bldg					1 story; poss related to item 3	30	Security bldg					Flat roof. 1 story; aboveground covered passageway extends into operations area
5	Security checkpoint					Guardhouse and gate	31	Personnel passageway					Partly earth covered; constructed during SS-20 conversion
6	Utility bldg					1 story; flat roof	Area C						1 story; flat roof; open sides
7	Transformer bldg					1 story; flat roof; separately secured	32	5-bay garage					1 story; flat roof
8	Barracks/admin bldg (7)					1 story; peaked roof; bldgs have minor variations in entrance and window patterns	33	Admin/security bldg					1 story; flat roof
9	Dorm					4 stories; flat roof; constructed during SS-20 conversion; replaced 3 barracks	34	Maint/workshop bldg					1 story; flat roof
10	Firehouse					1 story; hipped roof; wide entrance ramp	35	8-bay garage					
11	Admin bldg					1 story; peaked roof	Steamplant						Stepped roof. 2-story sect
12	Admin bldg					1 story; peaked roof; cupola-covered extension at northern end	36	Aux diesel generator bldg					
13	Prob officers' qtrs					1 story; peaked roof		sect					
14	Prob sauna					Hipped roof. 1 story	37	Cooling tower					
15	Rec bldg					Stepped roof with 2-story sect	38	Powerhouse					Flat roof. 2 stories; raised sect at southern end
16	Messhall					Hipped roof. 1 story		sect					
17	Prob admin bldg					1 story; peaked roof	39	Prob pumphouse					Flat roof. 1 story; surrounded by at least 3 buried stor tanks and a circular road
Agricultural Area													
18	Cattle barn					Peaked roof. 1 story; fenced	Agricultural Area						Peaked roof. 1 story
19	Admin/stor bldg					Peaked roof. 1 story; assoc with barn	40	Prob admin/stor bldg					Peaked roof. 1 story
Vehicle Maintenance/Storage Areas													
Area A													
20	6-bay garage (3)					Drive in; slightly hipped roof; used for GSE maint when SS-7 site was operational; bays deep enough to park SS-20 TELs and spv vans	41	Prob stor bldg					Peaked roof. 1 story
21	Admin/workshop bldg					Flat roof. 1 story; constructed during SS-20 conversion	42	Prob stor bldg					Peaked roof. 1 story; across from messhall
Area B													
22	2-bay garage					Drive in. 1 story; flat roof	43	Food stor bldg					Semiburied and earth covered; entr at ends
23	Maint/workshop bldg					1 story; flat roof	44	Prob stor bldg					Flat roof. 1 story; poss open-sided shed
24	Maint/workshop bldg					Flat roof; partial 2nd story. 1 story projection, [] h, at end	45	Prob stor bldg					Flat roof. 1 story
25	Missile-ready bldg (2)					4 bays; drive through; flat roof. 1 story; prev SS-7 missile-ready bldg	46	Prob stor bldg					Flat roof; irreg shape
26	8-bay garage					Drive in; slightly peaked roof. 1 story	OPERATIONS AREA						Sliding roof; houses SS-20 missile on TEL; additions that altered shape removed between []
							47	Single-bay garage (9) door					Flat roof. 1 story. 3 sets of double doors; houses SS-20 spvt vans; wall extends [] above roof on sides and front
							48	3-bay garage (3)					Drive in; prev used for SS-7 propellant vehicles
							49	Bunker (2)					Flat roof; prev used in SS-7 operations
							50	2-bay garage					Drive in; prob for SS-7 []
							51	Bunker					1 story; specific function unk
							52	Flat-roofed bldg					

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Table 5.
Verkhnyaya Salda Mobile IRBM Base 5, USSR
(Items keyed to Figure 7)

This table in its entirety is classified SECRET/WNINTEL

Item	Description	Dimensions			Roof Cover	Remarks
		L	(m) W	H		
GENERAL SUPPORT AREA						
Housing/Admin Area						
1	Temporary support area				Used by construction personnel during SS-20 conversion; only 1 structure remained after Jan 82	
2	Transformer bldg				Flat roof, 1 story; separately secured	25X1
3	Prob officers' qtrs				Flat roof, 1 story; separately secured	
4	Water tower					
5	Horiz stor tanks (approx 6)				Emplaced during SS-20 conversion; tanks observed buried in Jan 82	
6	Barracks (7)				Peaked roof, 1 story; minor variations in dimensions of individual bldgs	
7	Admin bldg (4)				Peaked roof, 1 story; all bldgs have <input type="text"/> flat-roofed extensions	25X1
8	Utility bldg upper sect lower sect					
9	Admin bldg				Flat roof, 1 story	
10	Prob rec bldg				Flat roof, 1 story	
11	C3 bldg				Flat roof, 1 story, C-shaped; prob cable connected to lattice tower	
12	Messhall				Hipped roof, 1 story	
13	Admin bldg				Peaked roof, 1 story	
14	Firehouse				Flat roof, 1 story, 2 bays	
15	Cooling tower					
Vehicle Maintenance/Storage Area						
16	6-bay garage (2)				Drive in; prev used for SS-7 GSE maint	25X1
17	Footings for 11-bay garage				Bldg in early stage of construction in Mar 82	
18	Security bldg				Flat roof, 1 story; controls gate across main entrance to area	
19	Admin bldg				Peaked roof, 1 story	
20	Stor shed				1 story, slanted roof	
21	8-bay garage				Drive in	
22	6-bay garage				Drive in	
23	Maint/workshop bldg				Flat roof, 1 story	
Agriculture Area						
24	Cattle barn assoc bldg				All in fenced enclosure	
25	Food stor bldg extension				Peaked roof, 1 story	
26	Admin/stor bldg				Peaked roof, 1 story	
27	Food stor bldg				Peaked roof, partly buried; entrance at each end	
28	Admin/stor bldg				Peaked roof, 1 story	
Steamplant						
29	Aux diesel generator bldg sect				2 stories with 1-story sect along each side	
30	Powerhouse				Flat roof, 2 stories; 1-story extension along each side	
31	Pumphouse				Flat roof, 1 story; surrounded by loop road and buried stor tanks	
OPERATIONS AREA						
32	Prob security bldg				Flat roof, 1 story	25X1
33	Prob security bldg				Flat roof, 1 story; covered passageway	
34	Bunker				Drive in; prev used for SS-7 warhead stor	
35	2-bay garage				Flat roof, 1 story	
36	Bunker attached gantry crane cover				Drive in; prev used for inspection and stor of SS-7 warheads	
37	Prob security bldg				Flat roof; 1 story w/observation tower; protects access to former <input type="text"/>	
38	Single-bay garage (9)				Sliding roof; houses SS-20 missile on TEL	25X1
39	Missile-ready bunker (2)				4 bays, drive in; prev used as SS-7 missile-ready bunker; vents added to roof during SS-20 conversion	
40	3-bay garage (3)				Flat roof, 1 story; 3 sets of double doors; houses SS-20 missile spt vans; wall extends <input type="text"/> above roof	25X1
41	Single-story bldg				Flat roof; function unk	
42	Vehicle shed				Flat roof, 1 story	
43	4-bay garage				Drive in; used in SS-7 operations	

SECRET**General Support Area**

52. (S/WN) The GSA consists of four subareas: a housing/administration area, a vehicle maintenance/storage area, an agricultural area, and a steamplant.

53. (S/WN) The housing/administration area contains seven single-story barracks totaling 3,836 square meters of floor space. Four administration buildings, a messhall, a probable recreation building, a probable officers' quarters, a C3 building, a utility building, a small transformer building, a water tower, approximately six buried horizontal storage tanks, and two other buildings used for miscellaneous administrative or logistic functions are also in the GSA.

54. (S/WN) The communications system consists of a C-shaped C3 building similar to the one at Verkhnyaya Salda Mobile IRBM Base 4. By [] the C3 building appeared to be externally complete, including a roof-mounted antenna array. A 28-meter-high lattice tower is probably cable connected to the C3 building.

25X1

55. (S/WN) The vehicle maintenance/storage area is in the western portion of the GSA and includes the two large former SS-7 GSE maintenance buildings, two garages, a maintenance/workshop building, a security building, and an administration building. Footings for an 11-bay garage were first observed in January 1982; the building was in the early stage of construction as of []

25X1

56. (S/WN) The agricultural area is near the messhall and barracks and includes a semiburied food storage building with entrances at each end, two administration/storage buildings, a food storage building, and a cattle barn within a fenced area.

57. (S/WN) The steamplant is near the northwestern corner of the GSA. The powerhouse is connected by aboveground steamlines to essential components of the operations area and the GSA. A cooling tower and an auxiliary diesel generator building are across the road from the steamplant. A pumphouse and buried fuel storage tanks are approximately 60 meters west of the steamplant.

58. (S/WN) Security consists of a single fence around the GSA. The fence has a security checkpoint and gate at the entrance to the GSA. The C3 building and the vehicle maintenance/storage area are separately secured.

Rail-to-Road Transfer Point

59. (S/WN) The rail-to-road transfer point (RTP) is 8 km west of Verkhnyaya Salda. It is on a rail spur extending from the main rail line between Verkhnyaya Salda and Nizhniy Tagil. The RTP (Figure 8) originally supported the Verkhnyaya Salda ICBM complex of SS-7 launch sites; however, it has undergone changes in order to support the SS-20 division. Facilities at the RTP consist of a receiving, inspection, and maintenance (RIM) facility; a GSE maintenance/storage area; and a receiving/storage area. The entire RTP is separately secured from the adjacent ICBM complex support facilities and the [] [] During the SS-20 conversion, an additional rail spur, a paved loop road, and two GSE transfer sheds were constructed.³

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REFERENCES**IMAGERY**

(S/WN) All relevant satellite imagery acquired from January 1978 through [] was used in the preparation of this report.

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MAPS OR CHARTS

SAC. USATC, Series 200, Sheet 0156-13, scale 1:200,000 (UNCLASSIFIED)

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*Extracted information is classified SECRET []

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REQUIREMENTS

COMIREX A11
Project 542031A

(S) Comments and queries regarding this report are welcome. They may be directed to [] Soviet Strategic Forces Division, Imagery Exploitation Group, NPIC, []

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